

generating a probe message for determining propagation time to a predetermined location; and

sending said probe message over a connectionless communication path that transports a data packet among a plurality of connectionless communication paths of a network, wherein the predetermined location is reachable via any one of the plurality of connectionless communication paths, wherein the propagation time is measured based on a reply message to the probe message.

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24. (Currently Amended) The method claim 23, wherein the probe message is generated according to an Internet Protocol, and the plurality of connectionless communication paths are established between a source router and a destination router that is associated with the predetermined location.

25. (Currently Amended) The method claim 24, wherein the probe message and the reply message transmissions are based on a common source IP address and destination IP address that identifies the connectionless communication path that transports the data packet.

#### REMARKS

By this amendment, claims 1-25 are pending, in which claims 1-4, 9, 12-15, 17-19, and 21-25 are amended. No new matter is introduced.

The final Office Action mailed April 17, 2003 rejected claims 1-7, 9-20, 22, and 23 as obvious under 35 U.S.C. § 103 based on *Mirek et al.* (US 5,878,032) in view of *Diebboll et al.* (US 5,886,643), claims 8 and 21 as obvious under 35 U.S.C. § 103 based on *Mirek et al.* in view of *Diebboll et al.* and in further view of admitted prior art, and claims 24 and 25 as obvious

under 35 U.S.C. § 103 based on *Mirek et al.* in view of *Diebboll et al.* and in further view of *Ball et al.* (US 6,446,200). Additionally, claims 1-3, 14, 18, and 21 were objected to.

In response to the objection of claims 1-3, 14, 18, and 21, Applicant has amended the claims accordingly.

Applicant has amended independent claims 1, 9, 14, and 22 to clarify the operation of the claimed invention. Claim 1 now recites “the packet traverses a particular connectionless communication path among a plurality of **connectionless** communication paths to the destination node.” Amended claim 9 recites “sending said probe message over a connectionless communication path among a plurality of **connectionless** communication paths for transporting a packet to a destination node.” Claim 14, as amended, includes the feature of “a probe poller processor receiving performance statistics information collected by a probing router that generates and sends a probe message over a connectionless communication path that transports a packet to a destination node that is reachable by any one of the plurality of **connectionless** communication paths.” Lastly, claim 22 recites “means for generating and sending a probe message over one of the plurality of **connectionless** communication paths to the destination router, the one connectionless communication path transporting the data packets.”

By contrast, *Mirek et al.* discloses (per the Abstract) an approach for continuously monitoring parameters of delay using measurement cells, i.e. test cells, test frames, performance management ATM OAM cells, or performance management frame relay frames. Applicants note that ATM is a connection-oriented technology such that the OAM cells are ensured to traverse the same VPC/VCC connection as that of data cells, whereby the delay would represent that experienced by the data cells.

The Office Action, on page 8, argues that a plurality of VPC/VCC connections between Node A and Node B. Even assuming *arguendo* that this contention were supported by *Mirek et al.*, these VPC/VCC connections are not connectionless, as positively claimed.

The secondary references of *Diebboll* and *Ball et al.* do not fill in the gaps of *Mirek et al.* *Diebboll* is relied on by the Office Action for a supposed teaching that a probe could be part of a router (page 3 of the Office Action). *Ball et al.* is applied for a supposed teaching of a monitoring system for collecting network parameters.

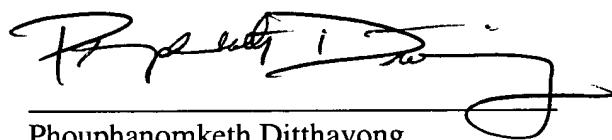
It is believed that the above changes to the independent claims 1, 9, 14, and 22 merely clarify the operation of the subject invention in relation to the communication paths. These changes are not believed to raise new issues requiring further consideration and/or search, and it is therefore respectfully requested that the present amendment be entered under 37 C.F.R. §1.116.

Therefore, the present application, as amended, overcomes the objections and rejections of record and is in condition for allowance. Favorable consideration is respectfully requested. If any unresolved issues remain, it is respectfully requested that the Examiner telephone the undersigned attorney at (703) 425-8508 so that such issues may be resolved as expeditiously as possible.

Respectfully Submitted,

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6/13/03  
Date



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## APPENDIX

1. (Currently Amended) A probing router, comprising:

a routing engine [configured to forward] forwarding a packet to a destination node of a communications network, wherein the packet traverses a particular connectionless communication path among a plurality of connectionless communication paths to the destination node; and

a probe mechanism [configured to generate and send] generating and sending a probe message over the particular connectionless communication path traversed by the packet for determination of statistics of the communications network.

2. (Currently Amended) The probing router of Claim 1, wherein the probe message is sent at time T1 and said probe mechanism [is configured to receive] receives a reply probe message at a second time, T2, sent by the destination node in response to receiving said probe message with a remote latency indicator therein so that service level agreement characteristics may subsequently be derived by comparing T1, T2 and the remote latency indicator.

3. (Currently Amended) The probing router of Claim 2, further comprising:

a memory [configured to store] storing the service level agreement characteristics identified by the probe mechanism.

4. (Currently Amended) The probing router of Claim 1, wherein the particular connectionless communication path supports a tunnel channel in a virtual private network.

9. (Currently Amended) A computer-readable medium carrying one or more sequences of one or more instructions for sending a probe message, the one or more sequences of one or more instructions including instructions which, when executed by one or more processors, cause the one or more processors to perform the steps of:

generating a probe message; and

sending said probe message over a connectionless communication path among a plurality of connectionless communication paths for transporting a packet to a destination node that is reachable by any one of the plurality of connectionless communication paths.

12. (Currently Amended) The computer-readable medium of Claim 11, wherein when the one or more instructions are executed by the one or more processors cause the one or more processors to further perform the step of:

calculating service level agreement statistics associated with the particular connectionless communication path based on T1, T2, and said remote latency indicator.

13. (Currently Amended) The computer-readable medium of Claim 9, wherein the plurality of connectionless communication paths is supported by a virtual private network.

14. (Currently Amended) A communication system for gathering traffic statistics, comprising:

a probing router [configured to generate and send] generating and sending a probe message and prepare performance statistics information;

a probe poller processor [configured to receive] receiving performance statistics information collected by a probing router that generates and sends a probe message over a

connectionless communication path that transports a packet to a destination node that is reachable by any one of the plurality of connectionless communication paths; and

a reporting mechanism, coupled to said probe poller processor, [and configured to present] presenting a compilation of said performance statistics information for comparison against performance thresholds of a service level agreement.

15. (Currently Amended) The system of Claim 14, wherein the plurality of connectionless communication paths is supported by a virtual private network.

17. (Currently Amended) The system of Claim 14, wherein said reporting mechanism [is configured to report] reports said performance statistics information in at least one of a printed form and a graphically displayed form.

18. (Currently Amended) The system of Claim 14, wherein said reporting mechanism [is configured to report] reports said performance statistics via a web interface.

19. (Currently Amended) The system of Claim 14, further comprising:  
a virtual private network builder [configured to receive] receiving topology information regarding an assignment of probing routers to a virtual private network and produce a control signal to be distributed to respective probing routers, said probing router being one of said probing routers.

21. (Currently Amended) The system of Claim 14, wherein said probe poller processor [is configured to calculate] calculates at least one of an availability and a packet loss rate of the connectionless communication path from said performance statistics information.

22. (Currently Amended) A probing router, comprising:

means for routing data packets to a destination router reachable over a plurality of connectionless communication paths within a virtual private network;

means for generating and sending a probe message over one of the plurality of connectionless communication paths to the destination router, the one connectionless communication path transporting the data packets; and

an enclosure that houses said means for routing and said means for preparing and sending.

23. (Currently Amended) A method for collecting network performance statistics, comprising the steps of:

generating a probe message for determining propagation time to a predetermined location; and

sending said probe message over a connectionless communication path that transports a data packet among a plurality of connectionless communication paths of a network, wherein the predetermined location is reachable via any one of the plurality of connectionless communication paths, wherein the propagation time is measured based on a reply message to the probe message.

24. (Currently Amended) The method claim 23, wherein the probe message is generated according to an Internet Protocol, and the plurality of connectionless communication paths are

established between a source router and a destination router that is associated with the predetermined location.

25. (Currently Amended) The method claim 24, wherein the probe message and the reply message transmissions are based on a common source IP address and destination IP address that identifies the connectionless communication path that transports the data packet.